2006-08 ENGINE

Ignition System (K20Z3) - Civic (Except Si)

COMPONENT LOCATION INDEX

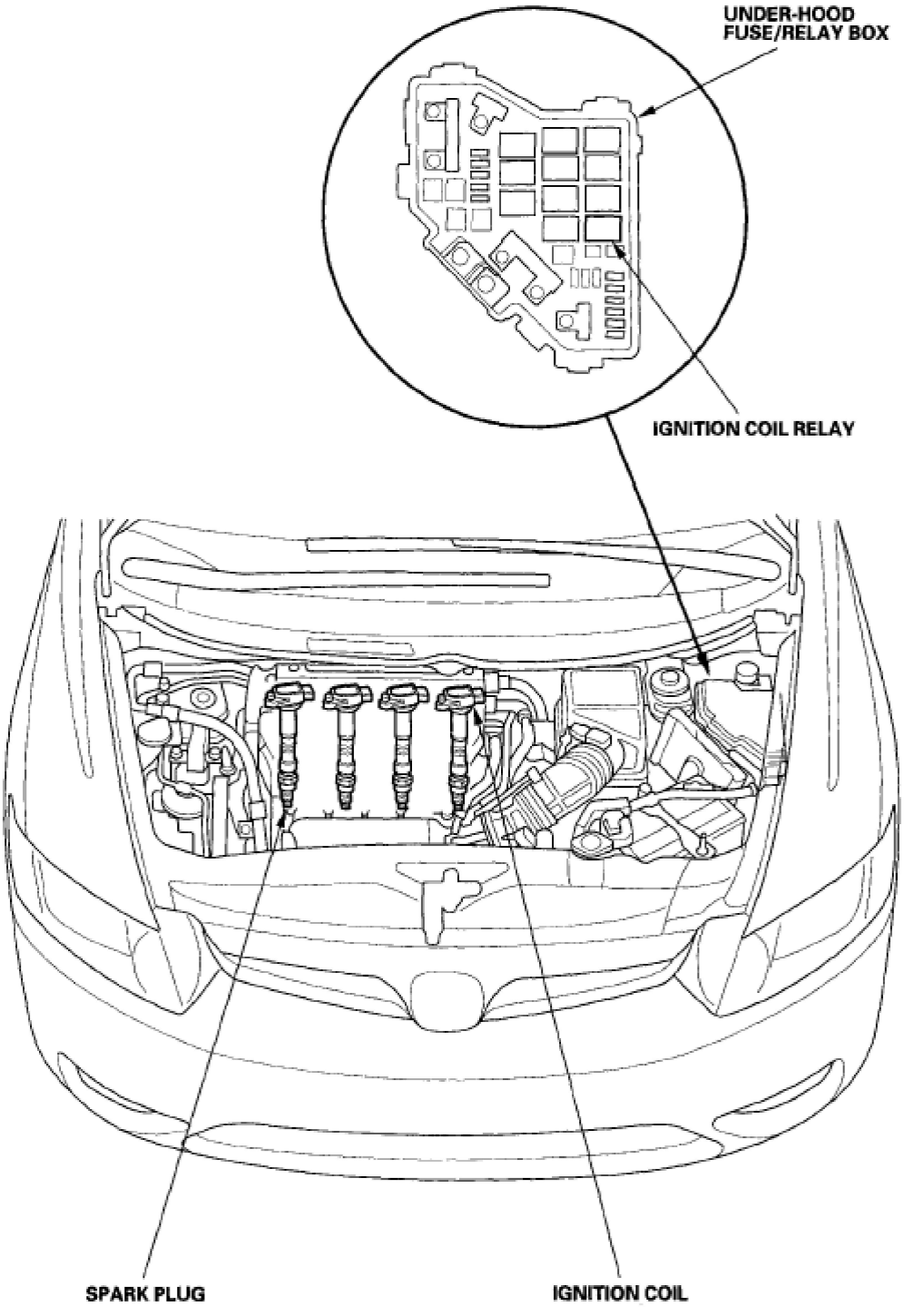

Fig. 1: Identifying Ignition System (K20Z3) Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

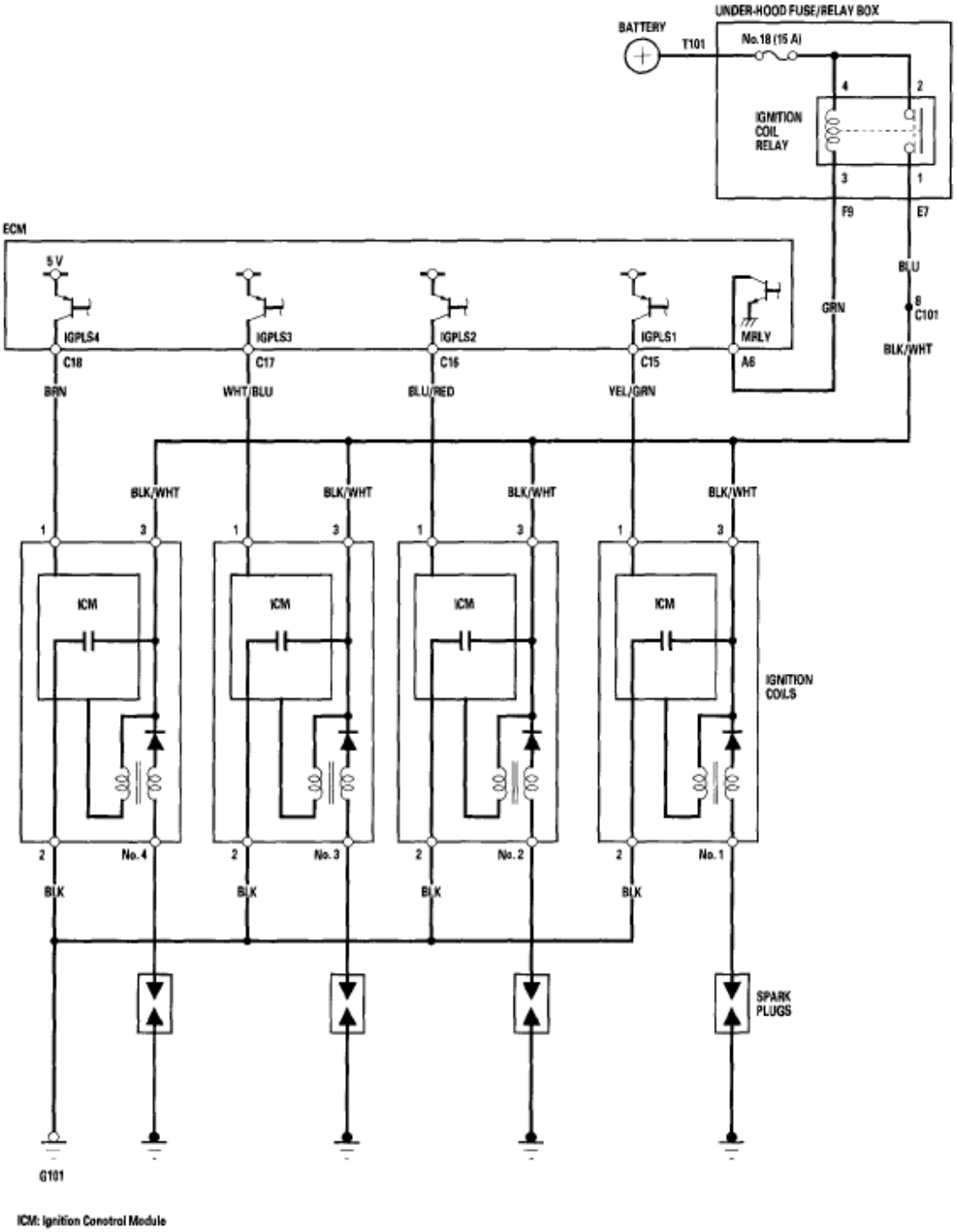

Fig. 2: Ignition System - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

IGNITION TIMING INSPECTION

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 on **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the vehicle and the ECM. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check for DTCs. If a DTC is present, diagnose and repair the cause before continuing with this test.
5. Start the engine. Hold the engine speed at 3,000 rpm without load (in neutral) until the radiator fan comes on, then let it idle.
6. Check the idle speed (see **IDLE SPEED INSPECTION**).
7. Jump the SCS line with the HDS.
8. Connect the timing light to the service loop (white tape).

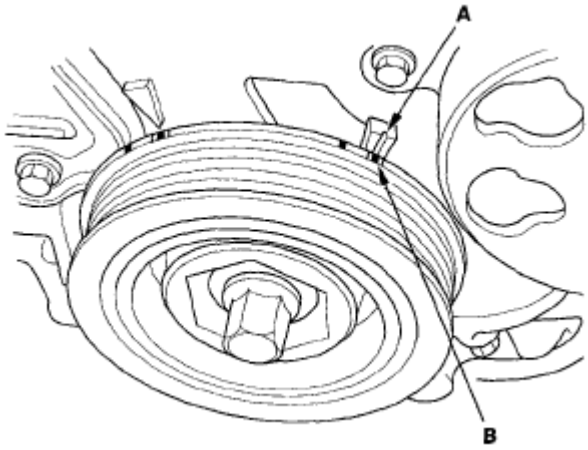

Fig. 3: Identifying Ignition Timing Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Aim the light toward the pointer (A) on the cam chain case. Check the ignition timing under a no load condition (headlights, blower fan, rear window defogger, and air conditioner are turned off).

Ignition Timing:

8 ° ±2 ° BTDC (RED mark (B)) at idle in Neutral

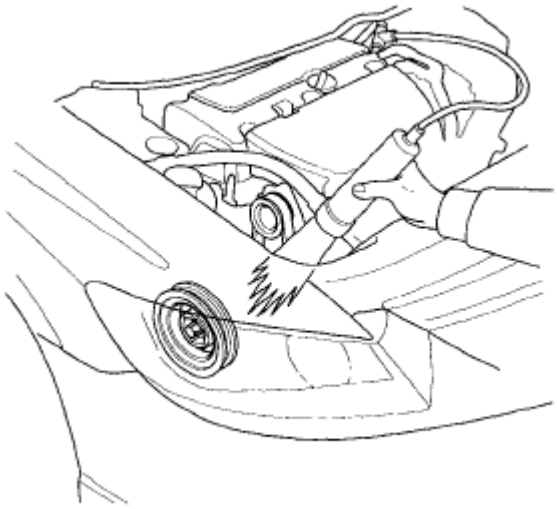

Fig. 4: Checking Ignition Timing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. If the ignition timing differs from the specification, check the cam timing. If the cam timing is OK, update the engine control module (ECM) if it does not have the latest software (see **UPDATING THE ECM**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM**), then recheck. If the system work properly, and the ECM was substituted, replace the original ECM (see **ECM REPLACEMENT**).
11. Disconnect the HDS and the timing light.

IGNITION COIL REMOVAL/INSTALLATION

1. Remove the under-cowl panel (see **FRONT GRILLE COVER REPLACEMENT**).
2. Remove the ignition coil cover (A), disconnect the ignition coil connectors (B), then remove the ignition coils (C).

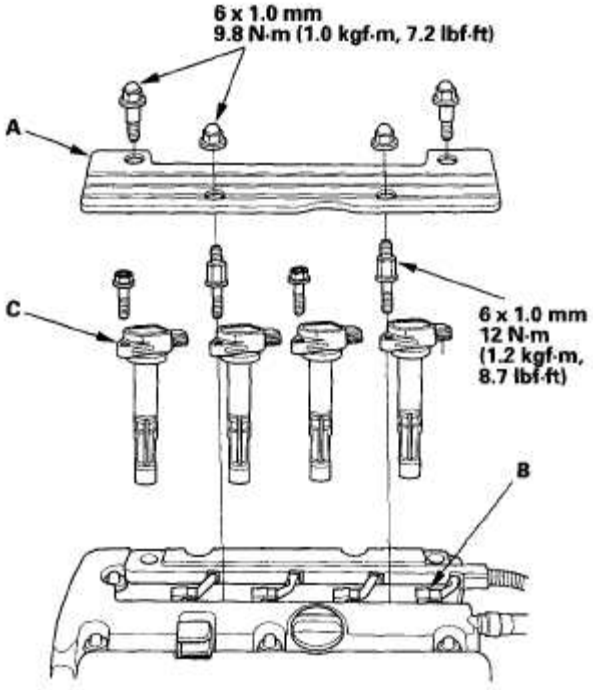

Fig. 5: Identifying Ignition Coil (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the ignition coils in the reverse order of removal.

IGNITION COIL RELAY CIRCUIT TROUBLESHOOTING

1. Check the No. 18 (15 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES -Go to step 2.

   NO -Replace the fuse.

2. Remove the ignition coil relay from the under-hood fuse/relay box, and test it (see **POWER RELAY TEST**).

   Is the relay OK?

   YES -Go to step 3.

NO -Replace the ignition coil relay.

3. Measure the voltage between ignition coil relay 4P socket terminal No. 2 and body ground, then terminal No. 4 and body ground.

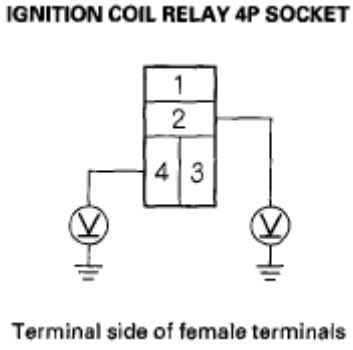

Fig. 6: Checking Voltage Between Ignition Coil Relay 4P Socket Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 4.

NO -Replace the under-hood fuse/relay box.

4. Check for continuity between ignition coil relay 4P socket terminal No. 2 and the No. 1 ignition coil 3P connector terminal No. 3.

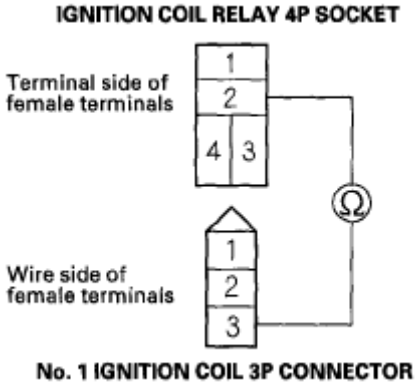

Fig. 7: Checking Continuity Between Ignition Coil Relay 4P Socket Terminal No. 2 And No. 1 Ignition Coil 3P Connector Terminal No. 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 5.

NO -Repair open in the wire between ignition coil relay 4P socket terminal No. 2 and ignition coil 3P connector terminal No. 3.

5. Check for continuity between each ignition coil 3P connector terminal No. 2 and the body ground.

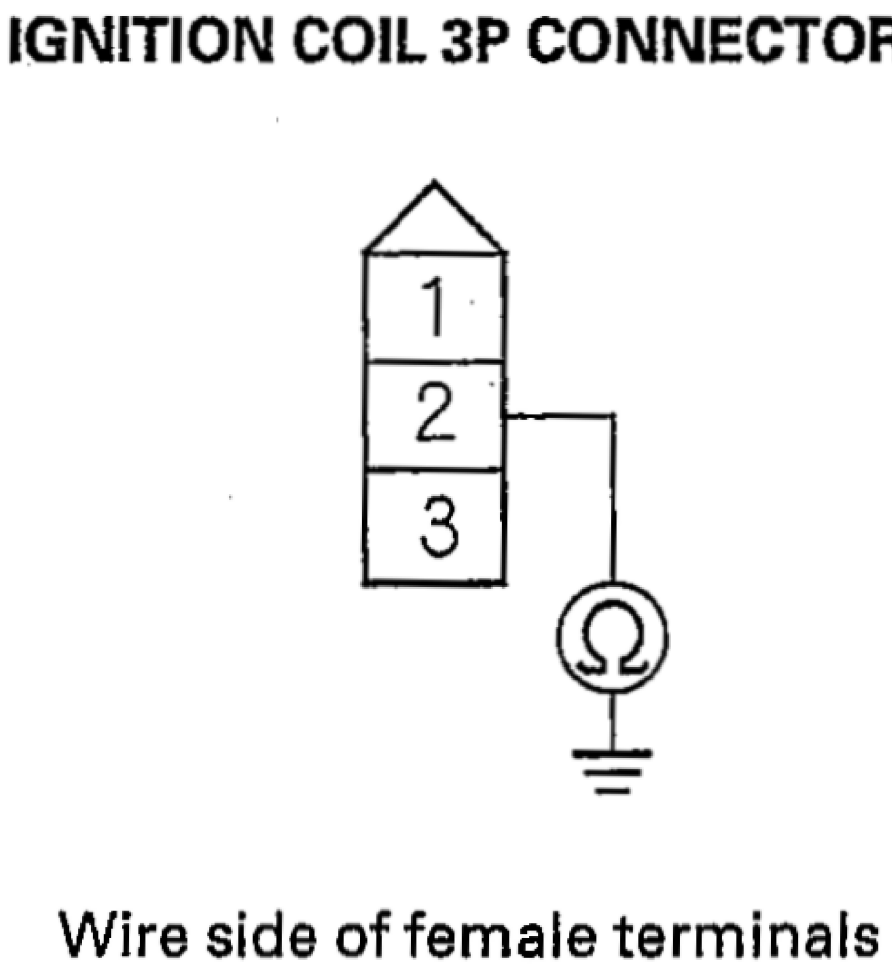

Fig. 8: Checking For Continuity Between Ignition Coil 3P Connector Terminal No. 2 And The Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 6.

NO -Repair open in the wire between ignition coil relay 3P socket terminal No. 2 and body ground.

6. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 on **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
7. Turn the ignition switch ON (II).
8. Make sure the HDS communicates with the vehicle and the engine control module (ECM). If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
9. Jump the SCS line with the HDS, then turn the ignition switch OFF.

NOTE: This step must be done to protect the ECM from damage.

10. Disconnect ECM connector A (44P).
11. Check for continuity between ignition coil relay 4P socket terminal No. 3 and body ground.

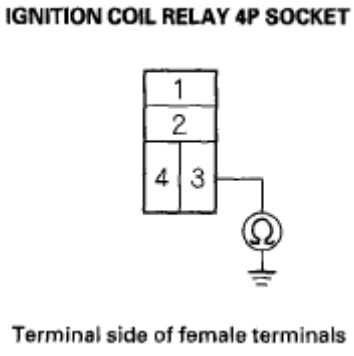

Fig. 9: Checking Continuity Between Ignition Coil Relay 4P Socket Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short in the wire between ignition coil relay 4P socket terminal No. 3 and ECM (A6).

NO -Go to step 11.

12. Check for continuity between ignition coil relay 4P socket terminal No. 3 and ECM connector terminal A6.

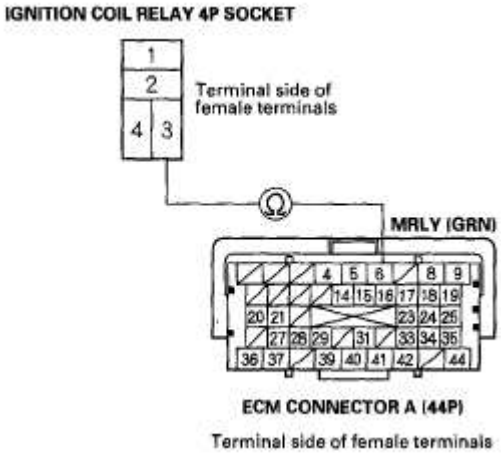

Fig. 10: Checking Continuity Between Ignition Coil Relay 4P Socket Terminal No. 3 And ECM Connector Terminal A6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -The system is OK at this time. Check for loose or poor connections at the ignition coil relay and the ECM (A6).

NO -Repair open in the wire between ignition coil relay 4P socket terminal No. 3 and the ECM (A6).

SPARK PLUG INSPECTION

1. Remove the spark plugs and inspect the electrodes and ceramic insulator.
   - Burned or worn electrodes may be caused by:
     - Advanced ignition timing

- Loose spark plug
- Plug heat range too hot
- Insufficient cooling

- Fouled plugs may be caused by:
  - Retarded ignition timing
  - Oil in combustion chamber
  - Incorrect spark plug gap
  - Plug heat range too cold
  - Excessive idling/low speed running
  - Clogged air cleaner element
  - Deteriorated ignition coils

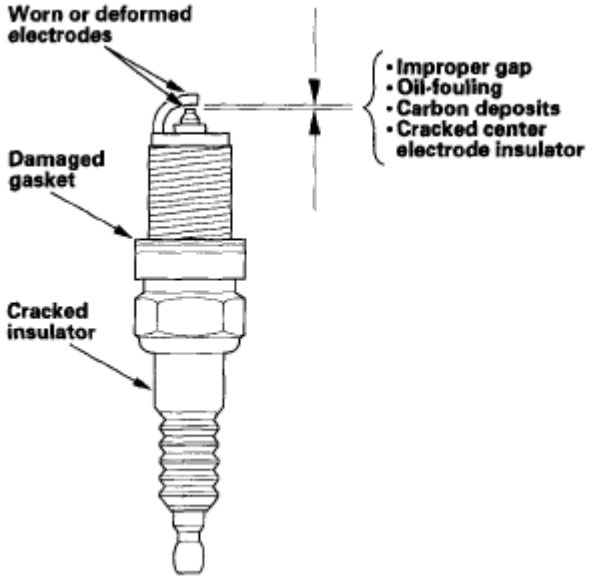

Fig. 11: Identifying Spark Plug Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the spark plug electrode is dirty or contaminated, clean the electrode with a plug cleaner.

NOTE:

- **Do not use a wire brush or scrape the iridium electrode since this will damage the electrode.**

- **When using a sand blaster spark plug cleaner, do not clean for more than 20 seconds to avoid damaging the electrode.**

3. Replace the plug at the specified interval, or if the center electrode is rounded (A), or if the spark plug gap (B) is out of specification. Use only the listed spark plugs.

   NOTE: Do not adjust the gap of iridium tip plugs.

   Spark Plugs

   NGK: IFR7G11KS

   DENSO: SK22PR-M11S

   Electrode Gap

   Standard (New): 1.0-1.1 mm (0.039-0.043 in.)

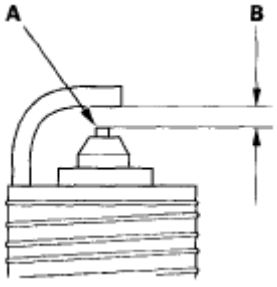

Fig. 12: Identifying Spark Plug Gap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Apply small amount of anti-seize compound to the plug threads, and screw the plugs into the cylinder head, finger-tight. Then torque them to 18 N.m (1.8 kgf.m, 13 lbf.ft).